

REMARKS**Summary of the Office Action**

Claims 9-10 are rejected under 35 U.S.C. § 112, second paragraph for indefiniteness.

Claims 9-10 are rejected under 35 U.S.C. § 102(b or e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent Publication No. 2003/0139122 to Lawing (“Lawing”), U.S. Patent Publication No. 2002/0076933 to Kawamura et al. (“Kawamura”), or U.S. Patent Publication No. 2001/0044257 to Southwick (“Southwick”).

Claims 9-10 are rejected under 35 U.S.C. § 102(b or e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Japanese Patent Publications JP 11-126765 (“JP ‘765”) and JP 10-296628 (“JP ‘628”).

Summary of Response to the Office Action

Applicant has canceled claims 9-10 and rewritten them as new claims 44-45. New 46-50 have also been added depending from claims 44 and 45.

Claims 44-50 are pending.

All Claims Define Allowable Subject Matter

Claims 9-10 are rejected under 35 U.S.C. § 112, second paragraph for indefiniteness.

Claims 9-10 have been canceled and replaced with claims 44-45, which have been rewritten to clarify and conform with current U.S. practice.

Claims 9-10 are rejected under 35 U.S.C. § 102(b or e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent Publication No. 2003/0139122

to Lawing (“Lawing”), U.S. Patent Publication No. 2002/0076933 to Kawamura et al. (“Kawamura”), or U.S. Patent Publication No. 2001/0044257 to Southwick (“Southwick”). Claims 9-10 are rejected under 35 U.S.C. § 102(b or e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Japanese Patent Publications JP 11-126765 (“JP ‘765”) and JP 10-296628 (“JP ‘628”). Applicants respectfully traverse these rejections.

One of the key limitations of claim 44 is “wherein the simulation method is characterized by a step which predicts the amount of discrete portions of the surface using an indicator tool which determines the height distribution of the surface with reference to the substrate when no pressure is applied to the polishing body, and using the height distribution as a parameter in calculations performed in the simulation stage.” This limitation is explained on pp. 35-38 and the principle of the limitation illustrated in Figures 13(a) and (b). The critical heights in the present invention are the overall heights of portions of the polishing pad – referred to as the “height distribution of the surface with reference to the substrate when no pressure is applied” – dimension “d” being one such height in Figure 13(a).

Only Lawing even makes reference to this key limitation. While Southwick mentions the height h_1 of pyramidal raised features 43 above a base elevation E, as shown in Figure 3 and described in paragraph [0025], there is no mention of the overall height of the polishing pad. Nor is there any mention in Southwick of the elastic properties of the polishing pad which make the measure of overall height important in the present invention. The only reason the heights of the pyramidal raised features 43 in Southwick are important is that the polishing surface area varies with the height of those features.

One limitation neither disclosed or suggested by any of the cited references is the “the indicator tool comprises at least one indicator selected from a set comprising the number of times that a dressing process is performed on the polishing body, the cumulative time of the dressing processes performed on the surface by the polishing body, and the cumulative time of polishing performed on the surface by the polishing body.” The specification of the present invention explains on pages 50-51 that predictions of the height distribution are made possible by accumulating data for similar polishing pads in similar circumstances and storing the data.

Lawing discloses analyzing initial pad surface texture, and analyzing surface texture during operation using surface texture measuring devices in paragraphs [0031] and [0032]. There is no disclosure or suggestion in Lawing of using stored data on varying height distributions to update predictions as a polishing body is consumed as disclosed and claimed in the present invention. This limitation of the present invention ensures that the polishing pad is being used for polishing a greater percentage of time (as opposed to stopping polishing to update measurements of height distribution) and/or provides more accurate predictions of polishing.

Furthermore, none of the cited references discloses or suggests the limitation of the judgment stage in the polishing process. In light of the foregoing, Applicants respectfully submit that claim 44 and its dependent claims 45-50 are in condition for allowance.

CONCLUSION

In view of the foregoing, Applicants respectfully request reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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